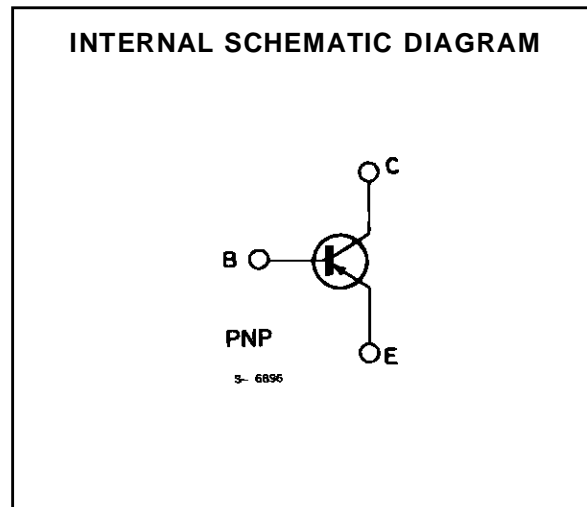
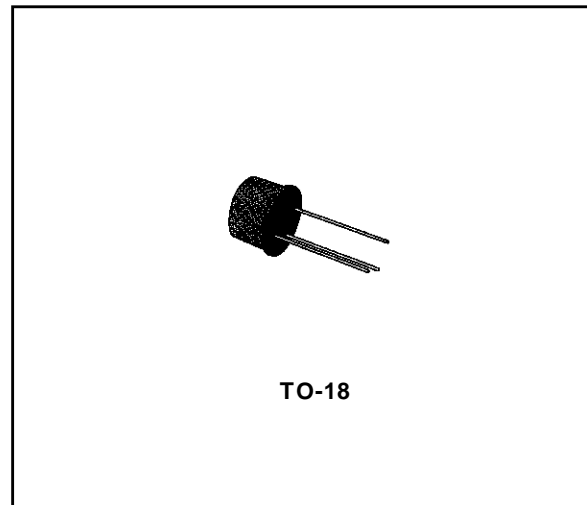


HIGH-FREQUENCY AMPLIFIER

DESCRIPTION

The BFX48 is a silicon planar epitaxial PNP transistor in Jedec TO-18 metal case. It is suitable for a wide range of applications including low noise, low current high gain RF and wide band pulse amplifiers.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	- 30	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	- 30	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	- 5	V
I_C	Collector Current	- 100	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.36	W
		1	W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

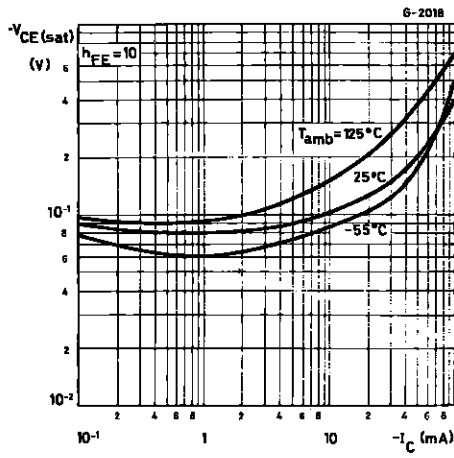
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	175	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	486	°C/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

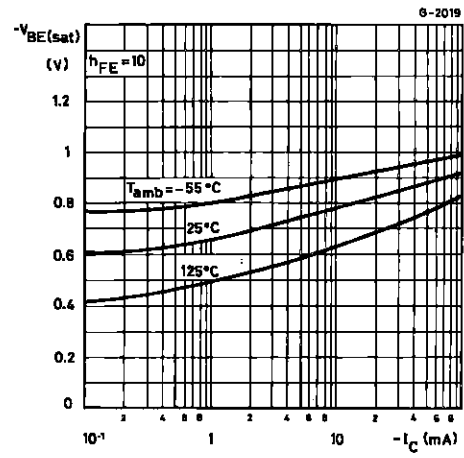
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	$V_{CE} = -20\text{ V}$ $V_{CE} = -20\text{ V}$ $T_{amb} = 125\text{ °C}$			-15 -15	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = -10\text{ μA}$	-30			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = -10\text{ mA}$	-30			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = -10\text{ μA}$	-5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -1\text{ mA}$ $I_B = -0.1\text{ mA}$ $I_C = -10\text{ mA}$ $I_B = -1\text{ mA}$ $I_C = -50\text{ mA}$ $I_B = -5\text{ mA}$		-0.1	-0.13 -0.14 -0.3	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = -1\text{ mA}$ $I_B = -0.1\text{ mA}$ $I_C = -10\text{ mA}$ $I_B = -1\text{ mA}$ $I_C = -50\text{ mA}$ $I_B = -5\text{ mA}$		-0.77	-0.75 -0.9 -1.1	V V V
h_{FE}^*	DC Current Gain	$I_C = -10\text{ μA}$ $V_{CE} = -1\text{ V}$ $I_C = -100\text{ μA}$ $V_{CE} = -1\text{ V}$ $I_C = -10\text{ mA}$ $V_{CE} = -1\text{ V}$ $I_C = -50\text{ mA}$ $V_{CE} = -1\text{ V}$ $I_C = -10\text{ mA}$ $V_{CE} = -1\text{ V}$ $T_{amb} = -55\text{ °C}$	40 70 90 20 30	80 130 160 40		
f_T	Transition Frequency	$I_C = -10\text{ mA}$ $V_{CE} = -20\text{ V}$ $f = 100\text{ MHz}$	400	550		MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -0.5\text{ V}$ $f = 1\text{ MHz}$		4	5.5	pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10\text{ V}$ $f = 1\text{ MHz}$		2.2	3.5	pF
NF	Noise Figure	$I_C = -1\text{ mA}$ $V_{CE} = -5\text{ V}$ $f = 100\text{ MHz}$ $R_9 = 100\text{ Ω}$		3.5	6	dB
t_{on}	Turn-on Time	$I_C = -50\text{ mA}$ $I_{B1} = -5\text{ mA}$		20	50	ns
t_{off}	Turn-off Time	$I_C = -50\text{ mA}$ $I_{B1} = -I_{B2} = -5\text{ mA}$		95	160	ns
$r_{bb}'C_{b'c}$	Feedback Time Constant	$I_C = -10\text{ mA}$ $V_{CE} = -20\text{ V}$ $f = 80\text{ MHz}$			40	ps

* Pulsed : pulse duration = 300 μs, duty cycle = 1 %.

Collector-emitter Saturation Voltage.

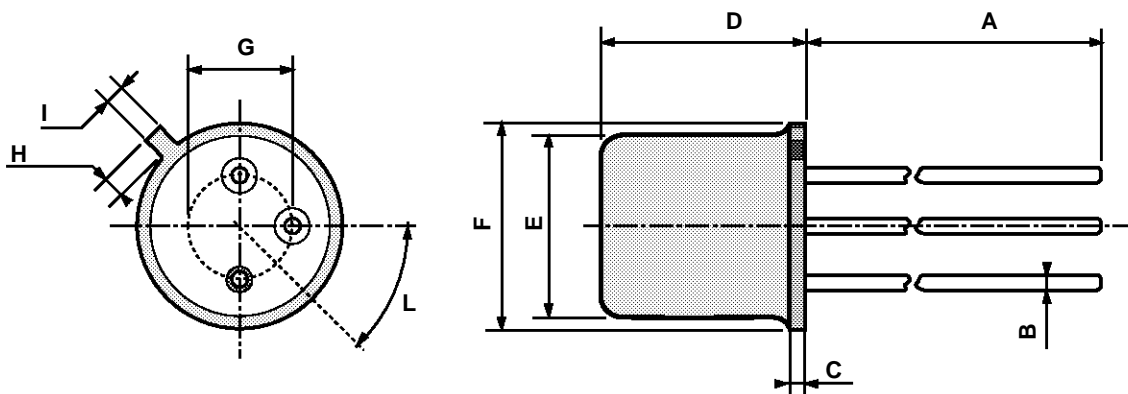


Base-emitter Saturation Voltage.



TO-18 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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